UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

November 14, 2008

Christopher Meyer
Project Manager - Systems Assessment & Facility Siting Division
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

Subject: Notice of Intent to Prepare an Environmental Impact Statement/Staff Assessment and Proposed Land Use Plan Amendment for the SES Solar Two project, Imperial County, CA

Dear Mr. Meyer:

The U.S. Environmental Protection Agency (EPA) has reviewed the October 17, 2008 Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS)/Staff Assessment for the Stirling Energy Systems (SES) Solar Two Project in Imperial County, California. Our comments are provided pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

EPA supports increasing the development of renewable energy resources, as recommended in the National Energy Policy. Using renewable energy resources such as solar power can help the nation meet its energy requirements without generating greenhouse gas emissions. To assist in the scoping process for the project, we have identified several issues for your attention in the preparation of the EIS. These issues are discussed in our detailed comments.

We appreciate the opportunity to review this NOI and are available to discuss our comments. Please send one hard copy of the Draft EIS and two CD ROM copies to this office at the same time it is officially filed with our Washington D.C. Office. If you have any questions, please contact me at (415) 972-3545 or at mcpherson.ann@epa.gov.

Sincerely,

Ann McPherson
Environmental Review Office

Enclosures: Detailed Comments

cc: Lynda Kastoll, Bureau of Land Management

US EPA DETAILED COMMENTS ON THE SCOPING NOTICE FOR THE ENVIRONMENTAL IMPACT STATEMENT (EIS)/STAFF ASSESSMENT AND PROPOSED LAND USE PLAN AMENDMENT FOR THE PROPOSED STIRLING ENERGY SYSTEM (SES) SOLAR TWO PROJECT, IMPERIAL COUNTY, CALIFORNIA, NOVEMBER 14, 2008

Project Description

The Stirling Energy System (SES) Solar Two Project would consist of a solar thermal power plant facility approximately 14 miles west of El Centro, California in Imperial County. The proposed project would be constructed in two phases utilizing SunCatcher technology, and would include approximately 30,000 250 kilowatt (kw) solar power dishes with a generating capacity of approximately 750 megawatts (MW). The first phase would consist of up to 12,000 SunCatchers configured in arrays of 200 1.5 MW solar groups (60 SunCatchers/1.5 MW group) with a generating capacity of about 300 MW. The second phase would consist of approximately 18,000 SunCatchers configured in 500 1.5 MW groups (60 SunCatchers/1.5 MW group) with a net generating capacity of 450 MW. Each SunCatcher system consists of a 38x40 foot wide solar concentrator dish that supports an array of curved glass mirror facets designed to automatically track the sun and focus solar energy onto a Power Conversion Unit which generates electricity. Related structures include a main services complex, assembly buildings, a 230-kilovolts (kV) electrical substation, a 10-mile transmission line, access roads, supply water line, and a 10-mile 230kV transmission line from the project site to the existing substation. The project would be located on approximately 6,500 acres of land, including 6,140 acres of BLM-administered public land and approximately 360 acres of privately owned land.

1. Statement of Purpose and Need

The Draft Environmental Impact Statement (DEIS) should clearly identify the underlying purpose and need to which the Bureau of Land Management (BLM) is responding in proposing the alternatives (40 CFR 1502.13). The *purpose* of the proposed action is typically the specific objectives of the activity, while the *need* for the proposed action may be to eliminate a broader underlying problem or take advantage of an opportunity.

> *Recommendation:*
> The purpose and need should be a clear, objective statement of the rationale for the proposed project. The DEIS should discuss the proposed project in the context of the larger energy market that this project would serve; identify potential purchasers of the power produced; and discuss how the project will assist the state in meeting its renewable energy portfolio standards and goals.

2. Alternatives Analysis

EPA urges a creative and flexible approach be taken in the development of potential alternatives. Note that the National Environmental Policy Act (NEPA) requires evaluation of reasonable alternatives, including those that may not be within the jurisdiction of the lead agency (40 CFR Section 1502.14(c)). A robust range of alternatives will include options for avoiding significant environmental impacts. The DEIS should provide a clear discussion of the reasons for

the elimination of alternatives which are not evaluated in detail. Reasonable alternatives should include, but are not necessarily limited to, alternative sites, capacities, and technologies as well as alternatives that identify environmentally sensitive areas or areas with potential use conflicts. The alternatives analysis should describe the approach used to identify environmentally sensitive areas and describe the process that was used to designate them in terms of sensitivity (low, medium, and high).

The environmental impacts of the proposal and alternatives should be presented in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public (40 CFR 1502.14). The potential environmental impacts of each alternative should be quantified to the greatest extent possible (e.g., acres of wetlands impacted, tons per year of emissions produced, etc.).

Recommendation:
The DEIS should describe how each alternative was developed, how it addresses each project objective, and how it will be implemented. The DEIS should clearly describe the rationale used to determine whether impacts of an alternative are significant or not. Thresholds of significance should be determined by considering the context and intensity of an action and its effects (40 CFR 1508.27).

3. Biological Resources

The DEIS should identify all petitioned and listed threatened and endangered species and critical habitat that might occur within the project area. The document should identify and quantify which species or critical habitat might be directly, indirectly, or cumulatively affected by each alternative and mitigate impacts to these species. Emphasis should be placed on the protection and recovery of species due to their status or potential status under the Endangered Species Act (ESA). We recommend that the DEIS include a biological assessment, as well as a description of the outcome of consultation with the U.S. Fish and Wildlife Service under Section 7 of the ESA. Analysis of impacts and mitigation on covered species should include:

- Baseline conditions of habitats and populations of the covered species;
- A clear description of how avoidance, mitigation and conservation measures will protect and encourage the recovery of the covered species and their habitats in the project area;
- Monitoring, reporting and adaptive management efforts to ensure species and habitat conservation effectiveness.

The DEIS should indicate what measures will be taken to protect important wildlife habitat areas from potential adverse effects of proposed covered activities. We encourage habitat conservation alternatives that avoid and protect high value habitat and create or preserve linkages between habitat areas to better conserve the covered species.

4. Air Quality

The DEIS should provide a detailed discussion of ambient air conditions (baseline or existing conditions), National Ambient Air Quality Standards (NAAQS), criteria pollutant nonattainment areas, and potential air quality impacts of the proposed project (including cumulative and indirect impacts). Such an evaluation is necessary to assure compliance with State and Federal air quality regulations, and to disclose the potential impacts from temporary or cumulative degradation of air quality.

The DEIS should describe and estimate air emissions from potential construction and maintenance activities, as well as proposed mitigation measures to minimize those emissions. EPA recommends an evaluation of the following measures to reduce emissions of criteria air pollutants and hazardous air pollutants (air toxics).

Recommendations:

- *Existing Conditions* – The DEIS should provide a detailed discussion of ambient air conditions, NAAQS, and criteria pollutant nonattainment areas in all areas considered for solar development.

- *Quantify Emissions* – The DEIS should estimate emissions of criteria pollutants from the proposed project and discuss the timeframe for release of these emissions over the lifespan of the project. The DEIS should describe and estimate emissions from potential construction activities, as well as proposed mitigation measures to minimize these emissions.

- *Specify Emission Sources* – The DEIS should specify the emission sources by pollutant from mobile sources, stationary sources, and ground disturbance. This source specific information should be used to identify appropriate mitigation measures and areas in need of the greatest attention.

- *Equipment Emissions Mitigation Plan (EEMP)* – The DEIS should identify the need for an EEMP. An EEMP will identify actions to reduce diesel particulate, carbon monoxide, hydrocarbons, and NOx associated with construction activities. We recommend that the EEMP require that all construction-related engines:

    - are tuned to the engine manufacturer's specification in accordance with an appropriate time frame;
    - do not idle for more than five minutes (unless, in the case of certain drilling engines, it is necessary for the operating scope);
    - are not tampered with in order to increase engine horsepower;
    - include particulate traps, oxidation catalysts and other suitable control devices on all construction equipment used at the project site;
    - use diesel fuel having a sulfur content of 15 parts per million or less, or other suitable alternative diesel fuel, unless such fuel cannot be reasonably procured in the market area; and

- include control devices to reduce air emissions. The determination of which equipment is suitable for control devices should be made by an independent Licensed Mechanical Engineer. Equipment suitable for control devices may include drilling equipment, generators, compressors, graders, bulldozers, and dump trucks.

- *Fugitive Dust Control Plan* - The DEIS should identify the need for *Fugitive Dust Control Plan.* We offer these general recommendations:

  - Stabilize open storage piles and by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
  - Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions; and
  - When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

5. Climate Change

Scientific evidence supports the concern that continued increases in greenhouse gas emissions resulting from human activities will contribute to climate change. Global warming is caused by emissions of carbon dioxide and other heat-trapping gases. Global warming can affect weather patterns, sea level, ocean acidification, chemical reaction rates, and precipitation rates, resulting in climate change.

Recommendation:
We recommend the DEIS include a discussion of climate change and how climate change could potentially influence the proposed project, especially within sensitive areas. We recommend this discussion include a short summary of any applicable climate change studies, including their findings on potential environmental impacts and their recommendations for addressing these effects.

Recommendation:
We recommend the DEIS quantify and disclose the anticipated climate change *benefits* of solar energy. We suggest quantifying greenhouse gas emissions from different types of generating facilities including solar, geothermal, natural gas, coal-burning, and nuclear and compiling and comparing these values.

6. Indirect and Cumulative Impacts

The cumulative impacts analysis should provide the context for understanding the magnitude of the impacts of the alternatives by analyzing the impacts of other past, present, and reasonably foreseeable projects or actions and then considering those cumulative impacts in their

entirety (CEQ's Forty Questions, #18). The DEIS should clearly identify the resources that may be cumulatively impacted, the time over which impacts are going to occur, and the geographic area that will be impacted by the proposed project. The DEIS should focus on resources of concern – those resources that are "at risk" and/or are significantly impacted by the proposed project, before mitigation. In the introduction to the *Cumulative Impacts Section*, identify which resources are analyzed, which ones are not, and why. For each resource analyzed, the DEIS should:

- Identify the current condition of the resource as a measure of past impacts. For example, the percentage of species habitat lost to date.
- Identify the trend in the condition of the resource as a measure of present impacts. For example, the health of the resource is improving, declining, or in stasis.
- Identify all on-going, planned, and reasonably foreseeable projects in the study area that may contribute to cumulative impacts.
- Identify the future condition of the resource based on an analysis of impacts from reasonably foreseeable projects or actions added to existing conditions and current trends.
- Assess the cumulative impacts contribution of the proposed alternatives to the long-term health of the resource, and provide a specific measure for the projected impact from the proposed alternatives.
- Disclose the parties that would be responsible for avoiding, minimizing, and mitigating those adverse impacts.
- Identify opportunities to avoid and minimize impacts, including working with other entities.

7. Water Resources

Water Supply and Water Quality

The DEIS should estimate the quantity of water the project will require and describe the source of this water and potential effects on other water users and natural resources in the project's area of influence. Assuming groundwater is used, the DEIS should clearly depict reasonably foreseeable direct, indirect and cumulative impacts to this resource. Specifically, the potentially-affected groundwater basin should be identified and any potential for subsidence and impacts to springs or other open water bodies and biologic resources should be analyzed. At a minimum, the DEIS should include:

- An analysis of the potential for alternatives to cause adverse aquatic impacts such as impacts to water quality and aquatic habitats;
- A discussion of compliance with Clean Water Act Section 404(b)(1) Guidelines (40 CFR 230) if alternatives propose to place fill in waters of the U.S. (WOUS);
- A detailed discussion of cumulative impacts to groundwater supply within the hydrographic basins that would support the alternatives; and
- A description of the water right permitting process, including whether water right permits contain special conditions; measures to mitigate direct, indirect, and cumulative impacts; and provisions for monitoring and adaptive management.

The DEIS should address the potential effects of project discharges, if any, on surface water quality. The specific discharges should be identified and potential effects of discharges on designated beneficial uses of affected waters should be analyzed. If the facility is a zero discharge facility, the DEIS should disclose the amount of process water that would be disposed of onsite and explain methods of onsite containment. The DEIS should describe the original (natural) drainage patterns in the project locale, as well as the drainage patterns of the area during project operations, and identify whether any components of the proposed project are within a 50 or 100-year floodplain. We also recommend the DEIS include information on the functions and locations of ephemeral washes in the project area, because of the important hydrologic and biogeochemical role these washes play in direct relationship to higher-order waters downstream.

Clean Water Act Section 404

The project applicant should coordinate with the U.S. Army Corps of Engineers to determine if the proposed project requires a Section 404 permit under the Clean Water Act.. Section 404 regulates the discharge of dredged or fill material into waters of the United States (WOUS), including wetlands and other *special aquatic sites*. The DEIS should describe all WOUS that could be affected by the project alternatives, and include maps that clearly identify all waters within the project area. The discussion should include acreages and channel lengths, habitat types, values, and functions of these waters. If a permit is required, EPA will review the project for compliance with *Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials* (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA ("404(b)(1) Guidelines"). Pursuant to 40 CFR 230, any permitted discharge into WOUS must be the least environmentally damaging practicable alternative (LEDPA) available to achieve the project purpose. .

Clean Water Act Section 303(d)

The CWA requires States to develop a list of impaired waters that do not meet water quality standards, establish priority rankings, and develop action plans, called Total Maximum Daily Loads (TMDLs), to improve water quality. The DEIS should provide information on CWA Section 303(d) impaired waters in the project area, if any, and efforts to develop and revise TMDLs.

8. Coordination with Tribal Governments

Executive Order 13175

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* (November 6, 2000), was issued in order to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, and to strengthen the United States government-to-government relationships with Indian tribes.

Recommendation:

We recommend the DEIS describe the process and outcome of government-to-government consultation between the BLM and each of the tribal governments within the project area, issues that were raised (if any), and how those issues were addressed in the selection of the proposed alternative.

National Historic Preservation Act and Executive Order 13007

Consultation for tribal cultural resources is required under Section 106 of the National Historic Preservation Act (NHPA). Historic properties under the National Historic Preservation Act (NHPA) are properties that are included in the National Register of Historic Places (NRHP) or that meet the criteria for the National Register. Section 106 of the NHPA requires a federal agency, upon determining that activities under its control could affect historic properties, consult with the appropriate State Historic Preservation Officer/Tribal Historic Preservation Officer (SHPO/THPO). Under NEPA, any impacts to tribal, cultural, or other treaty resources must be discussed and mitigated. Section 106 of the NHPA requires that Federal agencies consider the effects of their actions on cultural resources, following regulation in 36 CFR 800.

Executive Order 13007, *Indian Sacred Sites* (May 24, 1996), requires federal land managing agencies to accommodate access to, and ceremonial use of, Indian sacred sites by Indian Religious practitioners, and to avoid adversely affecting the physical integrity of such sacred sites. It is important to note that a sacred site may not meet the National Register criteria for a historic property and that, conversely, a historic property may not meet the criteria for a sacred site.

Recommendation:

The DEIS should address the existence of Indian sacred sites in the project area and discuss how the BLM will avoid adversely affecting the physical integrity of sacred sites, if they exist. The DEIS should provide a summary of all coordination with Tribes and with the SHPO/THPO, including identification of NRHP eligible sites, and development of a Cultural Resource Management Plan.

9. Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), directs federal agencies to identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations, allowing those populations a meaningful opportunity to participate in the decision-making process. Guidance[1] by CEQ clarifies the terms low-income and minority population (which includes American Indians) and describes the factors to consider when evaluating disproportionately high and adverse human health effects.

[1]Environmental Justice Guidance under the National Environmental Policy Act, Appendix A (Guidance for Federal Agencies on Key Terms in Executive Order 12898), CEQ, December 10, 1997.

Recommendation:
The DEIS should include an evaluation of environmental justice populations within the geographic scope of the project. If such populations exist, the DEIS should address the potential for disproportionate adverse impacts to minority and low-income populations, and the approaches used to foster public participation by these populations. Assessment of the project's impact on minority and low-income populations should reflect coordination with those affected populations.

10. Recreational Use

BLM is entrusted with the multiple-use management of natural resources on public land, and that public land must be managed for outdoor recreation and natural, scenic, scientific, and historical values. The development of solar resources could restrict or reduce the opportunities for recreational use, including off-highway vehicles (OHV) that may access areas that may have been designated as open for recreational use.

Recommendation:
EPA recommends that there be full disclosure of the impacts to recreational users in the project area. The DEIS should clarify what general measures will be incorporated to ensure that OHV and other recreational users are not injured due to hazards associated with exposed solar collectors, piping, and transmission lines. It would be reasonable to assume that OHV users do not always stay on designated trails or may not know which trails are in fact designated. Some precautions regarding safety should be implemented.

11. Invasive Species

Executive Order 13112, *Invasive Species* (February 3, 1999), mandates that federal agencies take actions to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impacts that invasive species cause. The DEIS should include a project design feature that calls for the development of an invasive plant management plan to monitor and control noxious weeds. Executive Order 13112 also calls for the restoration of native plants and tree species. If the proposed project will entail new landscaping, the DEIS should describe how the project will meet the requirements of Executive Order 13112.

12. Hazardous Materials and Hazardous Waste

The DEIS should address potential direct, indirect and cumulative impacts of hazardous waste from construction and operation. The document should identify projected hazardous waste types and volumes, and expected storage, disposal, and management plans. It should address the applicability of state and federal hazardous waste requirements. Appropriate mitigation should be evaluated, including measures to minimize the generation of hazardous waste (i.e., hazardous waste minimization). Alternate industrial processes using less toxic materials should be

evaluated as mitigation. This potentially reduces the volume or toxicity of hazardous materials requiring management and disposal as hazardous waste.

13. Coordination with Land Use Planning Activities

The DEIS should discuss how the proposed action would support or conflict with the objectives of federal, state, tribal or local land use plans, policies and controls in the project area. The term "land use plans" includes all types of formally adopted documents for land use planning, conservation, zoning and related regulatory requirements. Proposed plans not yet developed should also be addressed it they have been formally proposed by the appropriate government body in a written form (CEQ's Forty Questions, #23b).